



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,158	02/16/2001	Stephan W. Wegerich	7060/70479	1544
22242 7590 02/10/2009 FITCH EVEN TABIN AND FLANNERY 120 SOUTH LASALLE STREET SUITE 1600 CHICAGO, IL 60603-3406				
EXAMINER				
GULL, RUSSELL L				
ART UNIT		PAPER NUMBER		
2123				
MAIL DATE		DELIVERY MODE		
02/10/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/784,158

Applicant(s)

WEGERICH ET AL.

Examiner

Russ Guill

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21, 25-28, 31-37 and 50-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 25-28, 31-37 and 50-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notices of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the Amendment filed November 25, 2008. No claims were canceled. Claims 52 - 54 were added. Claims 1 - 21, 25 - 28, 31 - 37, and 50 - 54 are pending and have been examined. Claims 1 - 21, 25 - 28, 31 - 37, and 50 - 54 have been rejected. **Claims 1 - 21, 25 - 28, 31 - 37, and 50 - 54 are allowable over the prior art of record.**
2. This Office action is NON-final due to new rejections under 35 USC § 101.

Response to Applicant's Remarks

3. Regarding claims 1 - 21, 25 - 28, 31 - 37, 50 - 51 rejected under 35 USC § 112, second paragraph:
 - 3.1. Applicant's amendments to the claims overcome the rejection.
4. Regarding independent claims 1 - 7, 13 - 21, 25 rejected under 35 USC § 101:
 - 4.1. Applicant's arguments have been fully considered, but are not persuasive.
 - 4.2. While the claims have been amended to recite a method of monitoring a system instrumented with sensors, the sensors are in the preamble, and thus receive no patentable weight. The claim limitations still do not appear to be tied to a machine.
5. Regarding independent claims 1, 8, 13, 26 and 32 rejected under 35 USC § 103:
 - 5.1. Applicant's amendments and arguments have been fully considered, and are persuasive.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6.1. Claims 1 – 21, 25 – 28, 31 – 37, and 50 – 54 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

6.1.1. Regarding independent claims 1 and 13 and dependent claims, a valid process under 35 USC § 101 must either 1) transform underlying subject matter, or 2) be tied to another statutory class, such as a particular apparatus. In order to qualify as a statutory process, the claim should positively recite the other statutory class to which it is tied, for example by identifying the apparatus that accomplishes the method steps. A mere recitation of a computer in the preamble does not appear to be sufficient to tie a process to a particular apparatus.

Dependent claims are rejected similarly.

6.1.2. Regarding claim 32 and dependent claims, while the claim is directed to a computer program product comprising a computer readable medium, the claim limitations are directed to a series of processes. Since the preamble receives little or no patentable weight, the claim appears to be directed to a process, which is non-statutory. A computer readable medium should be claimed in the spirit of a computer readable medium having executable instructions thereon which when executed cause a processor to perform a method comprising: a series of steps.

6.1.3. Regarding claim 1 and dependent claims, the claim limitations appear to be an abstract idea, which is non-statutory. The input data does not appear to be specific, but rather appears to be generic, and not particular in type and nature. The steps of the claim appear to be computation or manipulation of abstract data. The claim does not appear to have a result that is a practical application. The claim does not produce an adaptive model, and an adaptive model appears to be an abstract idea. An adaptive model appears to have an interpretation as a simple collection of data values, which is not a practical application. It is not until a result is applied in a meaningful way that it has real world value and becomes a practical application.

6.1.4. Regarding claim 8 and dependent claims, the claim appears to be a machine implemented abstract idea, which is non-statutory. The input data does not appear to be specific, but rather appears to be generic, and not particular in type and nature. The claim does not appear to have a result that is a practical application. The claim does not produce an empirical model, and an empirical model appears to be an abstract idea. An empirical model appears to have an interpretation as a simple collection of data values, which is not a practical application. It is not until a result is applied in a meaningful way that it has real world value and becomes a practical application.

6.1.5. Regarding claim 13 and dependent claims, the claim limitations appear to be an abstract idea, which is non-statutory. The input data does not appear to be specific, but rather appears to be generic, and not particular in type and nature. The steps of the claim appear to be computation or manipulation of abstract data. The claim does not appear to have a result that is a practical application. While the claim appears to produce an empirical model, and empirical model appears to be an abstract idea. An empirical model appears to have an interpretation as a simple collection of data values, which is not a practical application. It is not until a result is applied in a meaningful way that it has real world value and becomes a practical application.

6.1.6. Regarding claim 26 and dependent claims, the claim appears to be a machine implemented abstract idea, which is non-statutory. The input data does not appear to be specific, but rather appears to be generic, and not particular in type and nature. The claim does not appear to have a result that is a practical application. The result of the claim appears to be a training set of data, which appears to be simply abstract data. It is not until a result is applied in a meaningful way that it has real world value and becomes a practical application.

6.1.7. Regarding claim 32 and dependent claims, the claim limitations appear to be an abstract idea, which is non-statutory. The input data does not appear to be

specific, but rather appears to be generic, and not particular in type and nature. The steps of the claim appear to be computation or manipulation of abstract data. The claim does not appear to have a result that is a practical application. The claim does not produce an adaptive model, and an adaptive model appears to be an abstract idea. It is not until a result is applied in a meaningful way that it has real world value and becomes a practical application.

Allowable Subject Matter

7. Following is a statement of reasons for indicating allowable subject matter:
8. While Black ("System Modeling and Instrument Calibration Verification with a Nonlinear State Estimation Technique") teaches receiving signals as input from a plurality of sensors as a set of training vectors; training an adaptive model using the training vectors; and Dougherty ("Supervised and Unsupervised Discretization of Continuous Features") teaches ordering the set of training vectors according to a corresponding value in each vector of a particular sensor; dividing the set of training vectors according to equally spaced ranges selected across the magnitude of the data, the magnitude forming the 'y' dimension of the data; selecting at least one vector from each of the equally spaced ranges for training the adaptive model; training the adaptive model with the vectors selected in the selecting step; and Freund ("Statistical Methods") teaches selecting less than all data to characterize a data set (page 591, Estimation); and Sung ("Example-Base Learning for View-Based Human Face Detection") teaches selecting a comprehensive but tractable set of training data; none of these references either alone or in combination with the prior art of record teaches a method of selecting input vectors for extraction of representative data for training of an adaptive model, and a system and method for monitoring a system instrumented with sensors, specifically including:

- 8.1. Regarding claim 1, "assigning each training vector a sequence number according to the ordering to form the 'x' dimension of the data with the sequence

numbers", in combination with the remaining features and elements of the claimed invention;

8.2. Regarding claim 8, "wherein each observation is assigned a sequence number according to the ordering, the sequence numbers forming the 'x' dimension of the data", in combination with the remaining features and elements of the claimed invention;

8.3. Regarding claim 13, "assigning a sequence number to each said ordered vector according to the ordering, and using the sequence numbers to represent an 'x' dimension of data", in combination with the remaining features and elements of the claimed invention;

8.4. Regarding claim 26, "assigning each system snapshot a sequence number according to the order, and using the sequence numbers to form an 'x' dimension of data", in combination with the remaining features and elements of the claimed invention;

8.5. Regarding claim 32, "assigning a sequence number to each said ordered vector according to the ordering, and using the sequence numbers to form an 'x' dimension of data", in combination with the remaining features and elements of the claimed invention;

9. It is for these reasons that the claims distinguish over the prior art of record.

Conclusion

10. The prior art made of record teaches knowledge of the ordinary artisan:

10.1. Maeda (U.S. Patent Number 5802509) teaches assigning a sequential number to data in ascending order (*figure 2, figure 20, column 7, lines 5 - 10*).

10.2. D. Psaltis et al., "A multilayered neural network controller", 1988, IEEE Control Systems Magazine, volume 8, issue 2, pages 17 - 21; teaches to uniformly populate the input space of the plant with training samples for a neural network training (*page 18, section "General Learning Architecture"*).

10.3. Kah-Kay Sung et al., "Example-Base Learning for View-Based Human Face Detection", 1998, IEEE Transactions on Pattern Analysis and Machine Intelligence, volume 20, number 1, pages 39 – 51; teaches selecting a comprehensive but tractable set of training examples for an adaptive model (*page 41, left-side column, second paragraph that starts, "Section 3 . . ."*).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is (571)272-7955. The examiner can normally be reached on Monday – Friday 9:00 AM – 5:30 PM.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russ Guill
Examiner
Art Unit 2123

RG

/Paul L Rodriguez/
Supervisory Patent Examiner,
Art Unit 2123

